

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-11. (Canceled)

12. (Currently amended) An air shutter to be installed in an opening of a doorway where a temperature difference exists between the inside and outside thereof in order to intercept an air stream through the opening of the doorway, wherein a single vertical air curtain plane is sectionalized into an upper zone and a lower zone defined by distinct airstreams, the upper zone being a warm air interception airstream zone and the lower zone being a cold air interception airstream zone, ~~and~~ wherein the upper warm air interception airstream zone and the lower cold air interception airstream zone are separated from each other to leave an intermediate region between said upper zone and said lower zone, and wherein an upper first opening for emitting warm air interception air and a lower second opening for emitting cold air interception air are provided on respectively opposite sides of the air shutter adjacent the sides of the doorway opening to form a single air shutter in which the direction of the airstream flowing generally horizontally in the upper warm air interception airstream zone above said intermediate region is opposite the direction of the airstream flowing generally horizontally in the lower cold air interception airstream zone below said intermediate region.

13. (Previously presented) An air shutter according to claim 12, wherein said intermediate region is a windless boundary zone.

14. (Canceled)

15. (Previously presented) An air shutter according to claim 12, wherein the cold air interception airstream zone below said intermediate region has a vertical height greater than the vertical height of the warm air interception airstream zone across the entire width of the air shutter opening.

16. (Previously presented) An air shutter according to claim 12, wherein said air shutter is structured such that the warm air interception airstream flowing in said upper zone above the intermediate region has a velocity greater than the velocity of said cold air interception airstream flowing in said lower zone below said intermediate region.

17. (Previously presented) An air shutter according to claim 12, wherein said air shutter comprises a frame comprised of ducts through which the warm air interception airstream flowing in said warm air interception zone above the intermediate region and the cold air interception airstream flowing in said cold air interception zone below the intermediate region, are circulated.

18. (Currently amended) An air shutter according to claim 12, to be installed in an opening of a doorway where a temperature difference exists between the inside and outside thereof in order to intercept an air stream through the opening of the doorway, wherein a single vertical air curtain plane is sectionalized into an upper zone and a lower zone defined by distinct airstreams, the upper zone being a warm air interception airstream zone and the lower zone being a cold air interception airstream zone; wherein the upper warm air interception airstream zone and the lower cold air interception airstream zone are separated from each other to leave an intermediate region between said upper zone and said lower zone, and wherein said air shutter comprises first and second gateposts respectively positioned adjacent sides of the doorway opening to form a single air shutter, each of said gateposts comprising an air duct; said first

gatepost having a lower discharge opening in said vertical air curtain plane, and said second gatepost having a lower return opening opposite said lower discharge opening in said air curtain plane for forming the cold air interception airstream; and said second gatepost having an upper discharge opening in said air curtain plane and said first gatepost having an upper return opening opposite said upper discharge opening in said air curtain plane for forming the warm air interception airstream.

19. (Currently amended) An air shutter according to claim ~~12~~ 18, wherein said air shutter is formed such that the warm air interception airstream zone covers the top from 0.1 to 0.4 of the height of the air shutter opening, and the cold air interception airstream zone covers the bottom 0.5 to 0.9 of the height of the air shutter opening.

20. (Currently amended) An air shutter according to claim ~~12~~ 18, wherein the air for forming the warm air interception airstream is emitted ~~slanting~~ outwardly of the air shutter opening ~~by~~ at an angle of 0 to 20° relative to said opening, and the air for forming the cold air interception airstream is emitted ~~slanting~~ inwardly of the air shutter opening ~~by~~ at an angle of 0 to 20° relative to said opening.

21. (Previously presented) An air shutter according to claim 18, wherein said first and second gateposts are provided with an upper crossbeam connecting the gateposts to form a portal-shaped structure, and wherein said gateposts function as circulation ducts through which the interception airstreams are circulated.

22. (Currently amended) An air shutter according to claim ~~12~~ 18, further comprising a stripped short curtain provided in front of the warm air interception airstream zone in the upper part of the air shutter opening for interrupting heat flow between the inside and outside of the upper part of the opening.

23. (Currently amended) An air shutter according to claim 18, wherein the lower discharge opening for the cold air interception airstream in said first gatepost is a slit having a height of about 0.6 of the height of the air shutter opening, and the upper discharge opening for the warm air interception airstream in said second gatepost is a slit having a height of about 0.1 of the height of the air shutter opening; the opening area of said lower discharge opening for the cold air interception airstream being larger than the opening area of the upper discharge opening for the warm air interception airstream so that the cold air interception airstream will have a slower velocity than the velocity of the warm air interception airstream; and wherein the upper return opening for the warm air interception airstream in said first gatepost is a slit having a height of about 0.4 of the height of the air shutter opening, and the lower return opening for the cold air interception airstream in said second gatepost is a slit having a height of about 0.9 of the height of the air shutter opening, whereby both interception airstreams increase in height as they flow from their respective discharge openings to their respective return openings; and wherein the warm air interception airstream is emitted ~~slanted~~ outwardly of the air shutter opening ~~by~~ at an angle of 0 to 20° relative to said opening, and the cold air interception airstream is emitted ~~slanted~~ inwardly of the air shutter opening ~~by~~ at an angle of 0 to 20° relative to said opening.

24. (Previously presented) An air shutter according to claim 12, wherein said intermediate region is an oppositely directed airstream of intermediate temperature.

25. (Currently Amended) An air shutter according to claim 12, to be installed in an opening of a doorway where a temperature difference exists between the inside and outside thereof in order to intercept an air stream through the opening of the doorway, wherein a single vertical air curtain plane is sectionalized into an upper zone and a lower zone defined by distinct airstreams, the upper zone being a warm air interception airstream zone and the lower zone being a cold air interception airstream zone; wherein the upper warm air interception airstream zone and the lower cold air interception airstream zone are separated from each other to leave an intermediate region between said upper zone and said lower zone, and wherein said air shutter comprises a pair of gateposts respectively positioned adjacent sides of the doorway opening opposite each other to form a single air shutter opening; each of said gateposts comprising an internal duct for passage of air, at least one discharge opening for emitting air from the duct to the air shutter opening, and at least one return opening for drawing in air from the air shutter opening into the duct, said discharge openings and return openings being formed in the gateposts along the vertical direction so that the discharge openings face return openings respectively associated therewith, a plurality of fans being provided in the gateposts at each of the discharge openings, whereby the discharge openings and associated fans are provided in the upper and lower parts of one of the gateposts, and the discharge opening and associated fans are provided in a mid-height position of the other gatepost so that an intermediate airstream is directed from said other gatepost to said one gatepost between the upper warm air interception airstream and the lower cold air interception airstream.